

## ANTIOXIDANT ACTIVITY OF DECOCTION, INFUSION AND HYDROALCOHOLIC EXTRACT OF CULTIVATED THYME (*THYMUS VULGARIS* L.)

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### ABSTRACT

*Thymus vulgaris* L. (commonly known as thyme) is a perennial subshrub, widely cultivated around the world and belonging to the Lamiaceae (lipped) family. The use of thyme, for various purposes, is a very old tradition and remains until now. In ancient times, it was used both for medicinal purposes and for cooking or magical properties [1,2]. Therefore, in face of the historical descriptions, it is conceived that the use of this plant have multiple health benefits, at different levels, and that many of the responsible components for those effects have not yet been discovered. Much more research is still need in order to prove all the potential effects of this plant. In the present work, flowering aerial parts (leaves and flowers, separated of branches), previously dried supplied for Soria Natural (Garray - Soria, Spain), were prepared (decoction, infusion and hydroalcoholic extract) and submitted to evaluation and comparison of the antioxidant properties. Four different *in vitro* assays were performed: scavenging effects on DPPH (2,2-diphenyl-1-picrylhydrazyl) radicals, reducing power (measured by ferricyanide Prussian blue assay), inhibition of  $\beta$ -carotene bleaching and inhibition of lipid peroxidation in brain cell homogenates by TBARS (thiobarbituric acid reactive substances) assay. In general, all the preparations revealed antioxidant potential measured by the different assays. Decoction preparation showed higher potential in DPPH and reducing power assays ( $EC_{50}$  values 112.3 and 100.7  $\mu\text{g/mL}$ , respectively), while infusion revealed higher potential in TBARS assays (7.1  $\mu\text{g/mL}$ ). Concerning the hydroalcoholic extract, the results were only higher in  $\beta$ -carotene bleaching test (31.5  $\mu\text{g/mL}$ ). According to the obtained results, it is possible to conclude that the use of infusions and decoctions of thyme, as complementary of daily food, could provide considerable benefits for health, not only in the treatment of related diseases to reactive species production and oxidative stress, but also prevention of aging and cellular damage [3]. These benefits conferred by thyme can be achieved by both internal and external use. Other studies confirm the high antioxidant activity of thyme samples from Croatia and Egypt [4,5] and that its use, at the recommended doses, is safe and no adverse reactions have been described. Nevertheless, further experiments are required in order to explore the mechanisms of action involved.

**Key words:** antioxidant activity; decoction; infusion; hydroalcoholic extract; *Thymus vulgaris* L.

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